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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,754	09/12/2003	Nobuo Komeyama	K06-161131M/TBS	5978

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EXAMINER

BINDA, GREGORY JOHN

ART UNIT	PAPER NUMBER
3679	

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,754

Applicant(s)

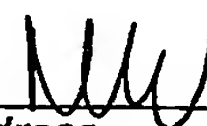
KOMEYAMA ET AL.

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040105.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election without traverse of a cross joint (Group I) in the reply filed on October 20, 2004 is acknowledged.

2. Claims 5 & 6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on October 20, 2004.

Drawings

3. The drawings are objected to because in Fig. 3, the residual compressive stress values are presented as negative values, but in the description (see for example 9, line 8) they are presented as positive. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified

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and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because:

- a. The summary at page 3, line 7 through page 4, line 21 is a reprint of the claims. The summary is supposed to summarize the claimed invention in clear narrative form, not simply parrot the claims.
- b. The term “pieces of shafts” that first appears at page 3, line 9 and reappears throughout the description is a nonsensical term. In each instance it should be replaced by an appropriate term, such as the term “trunnions”.
- c. An undefined abbreviation or acronym, “SUJ2 2” appears at page 8, line 10.
- d. Page 9, lines 21+ states that each race portion 2c after rolling burnishing is ensured with a hardness equal to or larger than Hv700 at a depth of at least 0.2mm from the surface, but Fig 2 shows that each race portion 2c after rolling burnishing has a hardness that is less than Hv700 at a depth equal to 0.4mm or more from the surface.
- e. Page 10, line 2, “a surface hardness” should be changed to “the surface hardness”.
- f. Page 10, lines 3 & 12, the term “roller burnished” should be inserted after “each”.
- g. Page 14, line 13, the meaning of the term “S54C of S55C” is unknown.

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5. The specification is objected to as failing to comply with 37 CFR 1.71 and 1.75(d)(1) because the detailed description fails to provide proper antecedent basis for the following claimed subject matter: claim 1, line 9: "outer ring members"
-

Claim Objections

6. Claims 1 & 3 are objected to because:
- a. The term "pieces of shafts" that appears at claim 1, line 3 (and reappears in claim 5) is a nonsensical term. In each instance it should be replaced by the term "trunnions".
 - b. In claim 3, line 3, "shoulder portion" should be changed to "shoulder portions" to agree with the recitation "shoulder portions" in claim 1, line 5.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 3 recites that the residual compressive stress at a depth of at least 0.3mm of a roller burnished race portion is equal to or larger than 800Mpa. However, Fig. 3 clearly shows that the residual compressive stress at a

depth of 0.3mm of a roller burnished race portion is equal to -800Mpa, not 800Mpa, and that as depth increases the absolute value of the compressive stress becomes smaller, not larger.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Gall, GB 2,117,088. Figs. 1-5 show a cross joint comprising: a cross shaft member 10 including, four trunnions 14 each having a neck portion and a race portion 30, and shoulder portions provided between adjacent neck portions; rolling members 24 adapted to rotate on the race portions; and outer ring members 22 fitted on the respective trunnions via the rolling members. At page 1, line 82 and page 2, lines 24, 100, 128 & 129, Gall discloses that the cross joint is roll burnished which indicates the residual compressive stress at a depth of at least 0.3 mm is equal to or greater than 800 Mpa.

11. Claims 1, 2 & 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Ostrovsky et al, US 3,655,466 (Ostrovsky). Fig. 1 shows a cross joint comprising: a cross shaft member 1 including, four trunnions 2 each having a neck portion and a race portion, and shoulder portions provided between adjacent neck portions; rolling members 5 adapted to rotate on the race

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portions; and outer ring members 4 fitted on the respective trunnions via the rolling members.

At col. 1, lines 54-55, Ostrovsky discloses the cross joint parts are made from carbon steel having a carbon content equal to or larger than 0.42 weight %.

12. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Laster, US 3,039,183. Figs. 1 & 11 show a cross joint comprising: a cross shaft member 23 including, four trunnions 23a-23d each having a neck portion and a race portion 55, and shoulder portions provided between adjacent neck portions; rolling members 60 adapted to rotate on the race portions; and outer ring members 22 fitted on the respective trunnions via the rolling members. At col. 2, line 57 and col. 3, line 30, Laster discloses that the cross joint is roll burnished which indicates the residual compressive stress at a depth of at least 0.3 mm is equal to or greater than 800 Mpa.

Conclusion

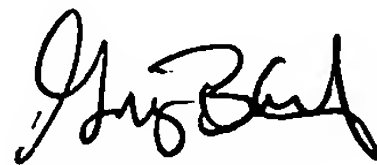
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In Fig. 1, Okuda shows a cross joint. Yoshida discloses a universal joint that has a particular residual compressive stress (see col. 4, line 29) and is made from carbon steel having a carbon content equal to or larger than 0.42 weight % (see abstract).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Binda
Primary Examiner
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